

Why Dredge?

Dredging is the removal of deposited sediment from waterways to maintain channel width and depth and ensure safe navigation. This includes the removal of previously undisturbed materials when constructing new channels, as well as the repetitive removal of naturally recurring sediments from existing channels. Sediment on the bottom of a channel is suctioned or dug up by dredging vessels and then transferred to barges, hoppers, aquatic disposal sites, or onshore disposal facilities.

In addition to channel creation and maintenance, dredging is also used to extract marine mineral resources, particularly sand and gravel, for use in coastal restoration (such as beach nourishment) or as aggregate in the construction industry.



A clam shell dredge deepens a navigation channel.
Courtesy: U.S. Army Corps of Engineers

NAVIGATION

Dredging is a fundamental activity for most ports and harbors. Most of the dredging projects that are undertaken in the U.S. are associated with federal navigation projects. These include creation of new navigational channels or maintaining existing channels and berths.

Rivers and streams carry sediments from inland locations to the ocean. As high-energy water slows down, heavier sediment suspended in the water column is deposited and settles to the bottom. If enough sediment accumulates in one area, it can form a shoal, causing water depth to become too shallow for ship traffic.

As waterways are naturally filled in with sand, mud, or clay, they may become a hazard to navigation. Navigational dredging

- Alleviates physical damage to ships and injuries to crews from ships running aground in shallow areas.
- Minimizes environmental damage caused by the release of cargo, particularly petroleum products, into the waterway.
- Supports domestic and international commerce and trade, which contributes billions of dollars to the U.S. economy.

MINERAL EXTRACTION

Dredging to extract resources involves removing sand and gravel from a marine site and using it elsewhere. This material can be used in coastal restoration (for replenishing beaches or creating wetlands) or in the construction industry. The primary goal is to remove a specific type of material for use elsewhere.

- **Construction and Industrial Use** – This refers to the use of nearshore dredged material for port development, airports, and urban and residential developments. Aggregate (sand and gravel) material is also dredged from the outer continental shelf for use as concrete, mortar, and asphalt in the construction industry.
- **Beach Nourishment** – Shoreline erosion is a problem for coastal communities along many ocean beaches and the Great Lakes shoreline. It is often possible to supplement natural beaches with dredged sand from coastal and off-shore areas.

Want to learn more?

For more information on dredging, please visit the U.S. Army Corps of Engineers' on-line educational resources.
<http://education.usace.army.mil/>